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Research Article

THE IMPORTANCE OF NUTRIENTS IN THE LEAVES IN THE FERTILIZATION OF APPLE ORCHARDS

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Karakhodjaeva Gulchehra
Researcher of the Research Institute of Horticulture, Viticulture and Enology named after Academician Mahmud Mirzaev, Uzbekistan

Dilshod Obidzhanov
Doctor of philosophy of agricultural sciences, laboratory manager, Scientific-Research Institute of Horticulture, Viticulture and Winemaking named after Academician Makhmud Mirzaev, Uzbekistan

Mirkhatam Mirzaev
Doctor of philosophy of agricultural sciences, laboratory manager, Uzbekistan

Mirzaev Mirkhatam Mirmahmudovich
Ph.D., Senior Research Fellow of the Research Institute of Horticulture, Viticulture and Enology named after Academician Mahmud Mirzaev,, Uzbekistan

ABSTRACT

The article examines the effect of the application of perennial blue fertilizers (red sesame, white sesame, oats, raygras, esparto) on the nutrient elements of tree leaves between rows of apple orchards. According to research, perennial legumes completely cover the soil surface, leaving a lot of organic matter, which is not cultivated during the growing season. Decomposition of the mulch layer during the summer and changes in the amount of microorganisms in the soil lead to an improvement in the nutrient regime during the season.

KEYWORDS

Garden yield, leaf analysis, organic fertilizers, nitrogen, phosphorus, potassium, fertilization system, turf system, perennial grasses.

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INTRODUCTION

According to the Law of Recycling in Agriculture, nutrients that are released from the soil along with the crop must be returned to the soil by fertilization. Whether the balance of nutrients that the plant can absorb in the soil is disturbed by the harvest or for other reasons, it should be restored with the necessary fertilizers or agrotechnical measures. Adherence to this law is important not only in maintaining or increasing soil fertility, but also in cultivating quality and high yields. When the mass of the fertile layer, which is released from the soil by wind and water erosion, is replaced by organic matter, manure, humus, sown crop residues, mineral fertilizers, it is possible to repeat the harvest of the previous year.

In conditions where the need for fertilizer, which is the main type of local fertilizer in agriculture, is not fully met, it is important to find new sources of enrichment of garden row spacing with organic matter.

Scientific research conducted in many CIS and foreign countries, and acad. Experiments conducted by BUvaVITI named after M.Mirzaev have shown that increasing the productivity of orchards and maintaining soil fertility, keeping the rows of orchards between the rows on the system of humus gives good results. In such an agronomic measure, a mixture of perennial legumes and cereals is sown between rows of garden, harvested at a height of 15-20 cm, and left on the soil as mulch, resulting in a layer of humus on the soil. As a result of decomposition of perennial legumes, the soil is enriched with organic matter-humus, all its agronomic properties are improved, and at the same time the soil is protected from water and wind erosion [1,2,6].

Most of the nutrients are spent on fruit development, leaf formation, growth of twigs. To determine how much and what nutrients a tree needs or absorbs, it is important to know the amount of nutrients in the leaves.

Determining the amount of nutrients in the leaves of plants is important in the effective use of mineral fertilizers, proper irrigation, studying the growth and development of plants and increasing their resistance to adverse environmental conditions.

Nitrogen (N) is a component of proteins, enzymes, vitamins, nucleic acids, amino acids, chlorophyll, glucose. Nitrogen preservatives play an important role in the process of metabolism in fruit trees. Nitrogen is in the form of humus and minerals in the soil, which are absorbed by the plant only when they are broken down by microorganisms and converted into nitrate and ammonia. The nitrate form is rapidly assimilated by the plant.

In the absence of nitrogen, the buds wake up late, the branches grow slowly, the fruits do not ripen well, and the fruits are likely to fall off quickly, and the leaves turn light green. If nitrogen is too high, the buds will not be fully formed, the buds will wake up early, the twigs and buds will grow a lot, the twigs will not ripen well, they will be resistant to frost.

Phosphorus (P) is part of nucleic acids and plays an important role in metabolism. Apples are abundant in seeds and fruits. Under the influence of phosphorus in the winter buds form inflorescences, the fruit is born well, the root develops perfectly, the growth period is shortened, the resistance of fruit trees to drought and frost increases. In the absence of phosphorus branches, leaves, inflorescences, fruits, especially roots, grow poorly, the branches do not ripen well, are susceptible to frost. The leaves turn a non-specific dark

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color, crumble, the tissue is quickly eroded, the plant does not live long.

Phosphorus fertilizers are less mobile in the soil. Therefore, they should be placed in the soil layer where the main part of the root is located. Excessive phosphorus in carbonate soils can cause chlorosis by inhibiting the absorption of substances such as zinc and iron.

Potassium (K) is also important in plant life, it accumulates in large amounts in the tissues and organs of the apple tree, where physiological and biochemical processes are accelerated. Potassium is abundant, especially during the period of rapid growth of twigs, leaves, buds. Under the influence of potassium, the process of photosynthesis is enhanced, the branches ripen well, the sugar content in the fruit increases, the cold hardiness of the apple tree increases. In the absence of potassium, the frost resistance of the apple tree decreases, the ripening of the branches, the juiciness of the fruit decreases, and a brown border appears around the leaves [5].

RESEARCH STYLE AND OBJECT

Research acad. At the central experimental plot BUvaVITI named after M.Mirzaev was carried out Starkrimson variety of apple MM-106 grafted. As a perennial green grass was used a mixture of legumes - Uzbek red clover (sebarga), white clover (sebarga), two different types of oats, raygras. The experiments were performed on four variants, 3 returns (each return consisted of 10 trees). In this system, a mixture of perennial legumes, cereals is sown between rows of garden, the height of green grass is 15-20 cm. when harvested, crushed and left on the soil as mulch. The KIR-1.5 unit was used to harvest and grind perennial weeds.

The content of N, P, K in the leaves is determined complex by the method of H.N. Pochinok [3].

RESEARCH RESULTS

In the creation of high-yielding orchards on typical irrigated gray soils of Tashkent region, the effect of nutrients on the leaves of trees when holding the soil between rows of orchards on the system of humus was studied. Studies have shown that the amount of nutrients in the variants sprayed with blue manure is higher than the control. Nitrogen content was found to be 22.3-30.7%, phosphorus content 18.7-40.6%, and potassium content 12.9-20.3% higher in the variants where perennial fertilizers were applied relative to control (Table 1).

1 – table

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Effect of perennial green manure fertilizers on nutrient accumulation in apple leaves

Experiment options	Nitrogen	control relatively,%	Phosphorus	control relative,%	Potassium	control relative,%
Black plow (control)	1,92	100	0,32	100	1,08	100
Red sebarga +	2,51	130,7	0,45	140,6	1,30	120,3
A mixture of grains	2,46	128,1	0,42	131,2	1,25	115,7
White sebarga +	2,35	122,3	0,38	118,7	1,22	112,9

CONCLUSION

The effect of perennial green manure fertilizers applied to increase soil fertility was found to be greater than the control of nutrients in the leaves of the apple tree.

As a result of decomposition of perennial legumes, the soil is enriched with organic matter, all its agronomic properties are improved. Decomposition of the mulch layer during the summer and changes in the amount of microorganisms in the soil lead to an improvement in the nutrient regime during the season.

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